Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Amendment of the Commission's Rules to Establish New Personal Communications Services	)	GEN Docket No. 90-314

To: The Commission

Comments Of The Ericsson Corporation In Response To The April 11-12, 1994 Panel Discussions Held By the FCC's PCS Task Force

The Ericsson Corporation ("Ericsson"), by its attorney, hereby submits its comments in response to written presentations and oral statements made at the April 11-12, 1994 Panel Discussions on PCS sponsored by the FCC's PCS Task Force. In support thereof, Ericsson states as follows:

I. Introduction

Two days of discussion on PCS issues from a number of different perspectives served to significantly focus the reconsideration debate. The meetings demonstrated that there is great demand for a variety of licensed PCS services and unlicensed PCS devices. Furthermore, based on economic[1],

[1] Most panelists on the panel entitled "Competitive Issues in the Wireless Telecommunications Market" agreed that seven PCS licensees per market was not supportable in the long term. Rather, there would ultimately be 2-3 PCS licensees per market in addition to existing cellular and ESMR licensees.

financial[2] and technical analysis, the number of successful PCS licensees ultimately will be in the range of 2-3 per market. Similarly, though the Panel Discussions were positive towards 2 GHz PCS services becoming viable, there was also an overwhelming consensus that the success of PCS is directly dependent on the speed with which PCS services can be deployed in the market.

Most participants in the Panel Discussions agreed that the FCC's actions on reconsideration of the *Second Report & Order*, 8 FCC Rcd 7700 (1993), will be critical to the question of how quickly PCS services can be deployed. If the FCC makes "substantial changes" to the PCS rules to correct any deficiencies in the *Second Report & Order* additional administrative litigation might ensue resulting in the delay in PCS licensing thereby creating a less competitive PCS service. If the FCC reaffirms its original PCS decision without correcting for any deficiencies, the marketplace will make corrections but at the cost of PCS being competitive at the earliest possible time. Thus, the ideal solution for the Commission on reconsideration is to make changes to the original PCS decision which will promote deployment of economical and technically efficient PCS systems from the beginning without causing undue delay in the deployment of licensed PCS systems and unlicensed

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[2] Most panelists on the panel entitled "Financing Perspectives on PCS" agreed that financing or other sources of capital would generally be available for 2-3 PCS licensees which served larger geographic areas and which had larger blocks of spectrum.

PCS devices. Set forth below are Ericsson's views of how the Commission can accomplish this goal for both licensed PCS services and unlicensed devices.

II. Licensed PCS Services

Equipment Issues

A number of panelists were asked about standards for licensed PCS systems. Some panelists acknowledged that the quickest way for the Commission to have PCS deployed would be to adopt uniform technical standards. Others suggested that ANSI-approved industry standards organizations are the better venue for such activities as long as the Commission adopts certain general technical parameters.

Ericsson acknowledges the Commission's historical reluctance to avoid setting detailed technical standards. Furthermore, it agrees with the Commission's position in this regard since those matters should be left to industry standards bodies. Yet, Ericsson agrees with a number of panelists that the Commission must adopt certain broad technical parameters when it reconsiders the *Second Report & Order* in order to avoid technical chaos in the PCS market. To have PCS systems deployed as quickly as possible it is important for the FCC to provide manufacturers with additional technical guidance so the design process for PCS equipment can proceed on a course parallel to PCS licensing.

The FCC should reconsider its technical rules by:

> Providing more specificity with respect to the maximum base station power PCS licensees should be allowed to use; base stations

should be authorized to use power in the range of 400-1600 watts EIRP depending on the nature of the market (urban/rural) in which a base station is located;

Articulating the specific frequencies to be used for uplink and downlink operations with the recommendation that the lower part of the paired licensed band should be used for subscriber terminal transmit and the upper part of the paired licensed band should be used for base station transmit when FDD technology is used, and;

Because the FCC has established an allocation scenario which will allow both FDD and TDD operations in the PCS band, adopting specific rules designed to avoid PCS to PCS system interference.

Allocation and Eligibility Issues

With respect to allocation issues, most panelists agreed that ultimately there will be 2-3 PCS licensees in addition to present cellular and ESMR licensees. Ericsson believes the existing 80 MHz allocation for the lower PCS block (1850-1890 MHz/1930-1970 MHz) is adequate to meet the demand for PCS services for the immediate future.

Because 80 MHz is ample spectrum for immediate PCS needs, Ericsson does not believe it is necessary for the Commission to allocate the upper licensed PCS band (2130-2150 MHz/2180-2200 MHz) at the present time. Rather, the Commission should hold the upper PCS band in reserve for future allocation. Taking such action will provide the Commission with time to make more reasoned decisions on future PCS allocations as PCS systems are

actually deployed.[3]

III. Unlicensed PCS Issues

Despite the fact that little attention was paid to unlicensed PCS issues at the April 11-12 Panel Discussions, there was consensus on two issues. First, members of the various panel discussions agreed there was synergy between unlicensed devices and licensed PCS services such that the Commission's present allocation for unlicensed PCS should stay the same in terms of size and location. Second, the microwave relocation issue which is so integral to the rapid deployment of licensed PCS services is as significant an issue for the unlicensed PCS community. The panelists who discussed the issue agreed that one large impediment to the deployment of unlicensed PCS devices was going to be the time consuming and expensive task of relocating existing microwave licensees.

UTAM, Inc., the organization charged by the Commission in the *Second Report and Order* to develop a plan to relocate microwave licensees in the unlicensed PCS band, emphasized the importance of microwave clearing to the unlicensed PCS community noting that a move from the existing allocation at 1890-1930 MHz to a higher frequency band could be the death knell of unlicensed PCS:

> As a result [of placing the unlicensed PCS band at 2100 MHz] opportunities for

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[3] Of course, holding the upper PCS band in reserve for future allocation will require regulatory action which allows cellular entities to bid for some PCS spectrum in the lower band.

> deployment of coordinatable products would dramatically diminish, band clearing could not be completed, and non-coordinatable products would never be deployed. Indeed, it is likely that companies would simply pull out of the unlicensed PCS market because it would no longer be viable.[4]

Similarly, UTAM, Inc., in explaining the importance of band clearing process, especially as it relates to its efforts to ensure that attention is paid to the clearing of spectrum for nomadic devices, stated:

> In developing its band clearing philosophy and plan, UTAM is looking for means to maximize the revenues available for microwave relocation in order to expedite the deployment of nomadic devices for both voice and data applications. UTAM is also investigating options such as guardbands as an interim means to permit some non-coordinatable deployment until full clearing of all of the unlicensed spectrum can occur. The timeframe for band clearing remains dependent upon the success of individual manufacturers in creating and marketing unlicensed PCS products that can provide a source of necessary revenues from clearing fees to fund the relocation process.[5]

Ericsson fully agrees with these statements. However, Ericsson proposes one modification to the unlicensed PCS rules which will promote a more rapid deployment of coordinatable and nomadic PCS devices in the isochronous and asynchronous bands.

As presently written, the unlicensed PCS rules provide for

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[4] See, *Written Statement of UTAM, Inc. In Support of Remarks of Sandy Abramson, President of UTAM, Inc.*, Gen. Docket No. 90-314, April 7, 1994, at 14 ("UTAM Statement").

[5] See, UTAM Statement, p. 17-18.

two separate 10 MHz isochronous sub-bands.[6] The rules governing operation in each of the isochronous bands are, however, different.[7] In the less crowded upper isochronous sub-band (1920-1930 MHz), the FCC makes provision for 8 channels 1.25 MHz in width. In the more crowded lower isochronous sub-band (1890-1900 MHz) there are two channels each of which can be no greater than 5 MHz in width. Section 15.321(a) also permits the upper and lower isochronous sub-bands to be subdivided into channels of smaller bandwidth but does not provide for the aggregation of smaller channels in the upper isochronous sub-band into larger wideband channels. Thus, narrowband technologies (i.e., those technologies which have channel bandwidths no greater than 1.25 MHz) have a full 20 MHz of isochronous spectrum in which to operate while wideband technologies (i.e. those technologies which have channel bandwidths greater than 1.25 MHz including certain state of the art TDMA and CDMA systems) have only 10 MHz of isochronous spectrum in which to operate.

The inequitable distribution of isochronous spectrum between narrowband and wideband technologies discriminates against spectrum efficient wideband technologies. More importantly for

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[6] Sec. 15.319(a).

[7] Sec. 15.321(a) reads: "Operation shall be contained within one of two channels starting with 1890-1895 MHz and ending with 1895-1900 MHz, or within one of eight channels that are 1.25 MHz in width starting with 1920-1921.25 and ending with 1928.75-1930 MHz. Further, sub-division of a 1.25 or 5 MHz channel is permitted with a reduced power level, as specified in Section 15.319(c), but in no event shall the emission bandwidth be less than 50 kHz."

purposes of this proceeding and the importance of clearing microwave links as quickly as possible, the separate and unequal isochronous sub-band regulations creates a disincentive to the clearing of microwave links at the earliest possible time.

Under the present unlicensed PCS rules every incentive is present to place greater emphasis on clearing the upper isochronous band because there are less microwave links in that band. If the FCC's rules are changed to eliminate the existing discriminatory channel segmentation rules to allow narrowband and wideband technologies to be deployed in the upper isochronous band, there will still be incentive to clear the upper isochronous band first. However, two additional important benefits will be realized. First, because narrowband and wideband manufacturers will be allowed to sell devices which can be operated in the upper isochronous band, more manufacturers will be involved in the band clearing process resulting in more equipment being sold and more revenues being available for band clearing at an earlier point in time.[8] Second, allowing narrowband and wideband devices to be deployed in the upper isochronous band will result in more choices for consumers and more competition in the unlicensed PCS market resulting in better products and lower prices.

For the reasons expressed above, Ericsson submits that the

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[8] The Commission recognizes that narrowband and wideband technologies can exist in the same isochronous sub-band since Section 15.321(a) allows 1.25 MHz narrowband channels to be used in the lower isochronous band.

FCC should reconsider the unlicensed PCS rules by making it possible for narrowband and wideband technology devices and or systems to be used in either the upper or lower isochronous band.

Respectfully submitted,

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April 22, 1994

CERTIFICATE OF SERVICE

I, Lisa M. Volpe, hereby certify that on this 22nd day of April 1994, copies of the foregoing Comments of the Ericsson Corporation In Response To The April 11-12, 1994 Panel discussions Held By the FCC's PCS Task Force were sent by postage-paid first class mail to the following:

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